V. Roads and Transit

Roads

Background

Most of the roads in the demonstration area were constructed and remain at rural standards with open ditches and no curbs, gutters, or sidewalks. As new development and redevelopment occurs, the road standards will become more urban. Traffic through and within the neighborhood has also increased, especially near the new, denser developments. The physical characteristics and location limit direct access into and through the demonstration area. This is especially true for the south, where the topography limits access to 154th Place SE from the Renton-Maple Valley Road. Increases in volumes have caused changes in traditional traffic patterns and poses growing conflict with pedestrians due to the lack of sidewalks. The increase in traffic is one of the major concerns of the demonstration area's residents.

King County classifies roads by four main types: principal arterial, minor arterial, collector arterial and local roadways. These categories are then separated between rural and urban standards. Arterial classifications are mapped and included in the technical appendix of the King County Comprehensive Plan. Descriptions of each classification type can be found in chapter two of the 2007 Road Design and Construction Standards. Within and at the borders of the demonstration area there are nearly 1 mile each of principal and minor arterials, 3 miles of collector arterials and approximately 16 miles of local roadways.

All of the concurrency zones within the demonstration area meet standards on the map adopted June 22, 2007.

Main Travel Corridors

Task force residents identified the main travel corridors for the demonstration area. They are:

- SE 128th Street
- 154th Place SE/156th Avenue SE
- Duvall Avenue NE
- 164th Avenue SE
- Sunset Boulevard NE / SE Renton-Issaquah Road (SR 900)

A principle arterial on the east side of Lake Washington, the SE Renton-Issaquah Road (SR 900)/Sunset Boulevard NE corridor provides access to and from the north. Traffic then connects to the demonstration area from Duvall Avenue NE or 164th Avenue SE. Duvall Avenue NE is a minor arterial that goes through east Renton and connects to the demonstration area via SE 128th Street. Also a minor arterial, 164th Avenue SE runs from May Valley to the west edge of the rural neighborhood at SE 128th Street.

The other principal arterial to serve the demonstration area is SE 128th Street, which is a portion of the northern edge of the demonstration area. Turning into NE 4th Street in Renton, this corridor connects the demonstration area to downtown Renton and provides access to both Renton and I-405. To the east, SE 128th Street connects to May Valley Road and then Issaquah-Hobart Road.

The 154th Place SE/156th Avenue SE corridor is the only southern access to the demonstration area. Connecting from Renton-Maple Valley Road (SR 169), 154th Place

SE crosses the Cedar River and then rises to the plateau, turning into SE 142nd Place and then 156th Avenue SE, extending north to SE 128th Street. Classified a minor arterial and also used as a snow route, this corridor is the primary access for the new developments in the Liberty Annexation area and SE 144th Street leading to the southern and western parts of the demonstration area. Additionally, this corridor is the only north/south connection between Renton-Maple Valley Road (SR 169) and SE Renton Issaquah Road between I-405 to the west and the Cedar Grove Road to the east. As such it is increasingly being used as a pass-through for non-resident traffic.

Traffic Volume

For demonstration area intersections recorded in the Average Weekday Daily Traffic (AWDT) volume data, the increase in traffic has been approximately 14-19% from 1997 to 2005. The largest increase has been on 174th Avenue SE, north of SE 128th Street. North of the intersection, for both south and north bound, the increase has been 34% from 1997 (using projected counts) and 2005.

The busiest intersections in the demonstration area are along SE 128th Street, with the intersections at 156th and 164th Avenues SE being the two busiest. The busiest turn is the left hand turn onto eastbound SE 128th Street from the northbound lane of SE 168th Avenue SE. The traffic heading east on SE 128th Street increases 47% at this intersection alone.

The intersection at SE 142nd Place and 156th Avenue SE has also seen increases in the traffic heading through the SE 154th Place/156th Avenue SE corridor. Two other intersections along this corridor, 154th Avenue SE and 156th Avenue SE (south of SE 142nd Place) had reductions in traffic. These roads connect to local streets, SE 142nd and 144th Streets respectively.

Driveways per Mile

Higher numbers of driveways per mile of roadway increase conflict points and can lead to higher accidents rates. This is especially true for roads that are heavily used or have higher levels of speed. For areas with sidewalks, frequent curb cuts for driveways can also negatively impact the walking experience for pedestrians.

The majority of the streets in the demonstration area have less than 70 driveways per mile. This equates to seven driveways on a 500 foot long block. Streets with higher density are limited to very short segments, sometimes less than a ¼ mile, predominately located west of Maywood Junior High.

Street Connectivity

Highly connected street networks have numerous routes to reach destinations. For vehicle travel this can result in a more direct route that minimizes travel time. For pedestrians this provides multiple walking options and the greater likelihood that destinations will be within a quarter mile walking distance. Neighborhoods with closed and poorly connected street networks create greater dependency on automobiles due to longer travel distances and more congestion on the fewer 'through-streets.'

One measurement of street connectivity is intersection density. For the demonstration inventory analysis, the number of intersections within a mile radius of each parcel was measured. Although this provides a bias towards large parcels such as

the Liberty High School, the general uniformity in parcel size in the demonstration area minimizes this bias. Using this determination, the area with the highest level of connectivity is north of the Liberty Annexation area. The blocks between 160th and 164th Avenues SE have the highest connectivity with over 20 intersections within a mile radius of each parcel. By contrast, the properties along the southern and eastern edges of the demonstration area have an intersection density of less than 10 within a mile radius of each parcel.

Dead ends and cul-de-sacs limit connectivity and reduce multiple routes for walking. Also using the same method of measuring within a mile radius of each parcel perimeter, the areas north and, especially, south of the Liberty Annexation area have the most dead ends and cul-de-sacs. The eastern third of the demonstration area has the least.

Comparing the areas with the most intersections and the most dead ends and cul-de-sacs provide a mixed result in terms of connectivity. Many of the same areas that have higher levels of intersections also have higher levels of dead ends and cul-de-sacs. The opposite holds true for much of the eastern part of the demonstration area. This would suggest that connectivity is limited throughout the demonstration area. For the areas north and south of the Liberty Annexation area, the higher levels of intersections are limited by the higher number of dead ends and cul-de-sacs. For the eastern portion of the demonstration area, longer block lengths limit both intersections and dead ends and cul-de-sacs.

Transportation Needs Report

The Transportation Needs Report (TNR) is a list of improvements recommended by the King County Road Services Division and approved by the Metropolitan King County Council to serve unincorporated King County transportation needs, updated to the year 2022. The 2006 update of the TNR has the following needs listed for the demonstration area. More information on a specific demonstration can be found on the TNR website.

Table 4: Transportation Needs Report

Transportation Needs Report Demonstrations for East Renton FBC Demonstration Area			
Location	Corridor	Priority	Preliminary Elements of the Demonstration
160th Ave SE and SE 128th St	SE 128th St	High	Preliminary suggested scope – add left-turn lane in the west/east bound directions
SE 128th St from 168th Ave SE to east of 169th Ave SE	SE 128th St	High	Improve sight distance – turn channels
SE 128th St, ITS from 148th Ave SE to May Valley Road	SE 128th St	Low	Provide Intelligent Transportation System Improvements, which could include cameras, vehicle detection, synchronize signals, communications
154th Pl SE from SE Jones Rd to SE 142nd Pl	156th Ave SE	High	Construct guardrail
156th Ave SE ITS from SE 128th St to SR 169	156th Ave SE	Medium	Provide Intelligent Transportation System improvements, which could include cameras, pavement sensors, speed warning system

Transportation Needs Report Demonstrations for East Renton FBC Demonstration Area			
Location	Corridor	Priority	Preliminary Elements of the Demonstration
154th Place SE/SE 142nd Pl from SE Jones Rd to 156th Ave SE	156th Ave SE	Low	Realign roadway – widen roadway
156th Ave SE from SE 142nd Pl to SE 128th St	156th Ave SE	TBD	Provide nonmotorized facility
156th Ave SE and SE 142nd Pl	156th Ave SE	TBD	Evaluate for turn lanes
156th Ave SE and SE 142nd Pl	156th Ave SE	TBD	Traffic signal
140th Ave SE from SE 141st to #13430	Misc	Medium	See CIP
164th Ave SE ITS from SE 128th St to May Valley Rd	Misc	Low	Provide Intelligent Transportation System Improvements, which could include cameras, vehicle detection
168th Ave SE and SE 134th St	Misc	Low	Install crosswalk overhead light
SE 144th St and 168th Ave SE	Misc	Low	Install crosswalk overhead light
SE 144th St from 168th Ave SE to 177th Ave SE	Misc	Low	Construct walkway

Resident's Concerns

One of the primary concerns expressed by task force residents is increasing traffic, both in terms of its impact on the main corridors and changes in travel behavior that are increasing traffic on traditional 'secondary' roads. The negative impacts of this increase is experienced through both congestion and speeding, the later of which is of particular concern due to the residential nature of the demonstration area and the need for pedestrians to also use the road. An additional concern is the potential impacts from new roads or intersections being created as a result of new developments.

Specific road concerns cited by the residents are as follows:

- 154th Place SE/156th Avenue SE Corridor – increase in traffic from both new development and pass-through traffic.
- The three-way intersection at SE 142nd Place and 156th Avenue SE is becoming worse as traffic increases.
- SE 128th Street – increased traffic is making access from connecting streets difficult, especially when making left-hand turns during the morning commute. This problem is especially acute at the 160th Avenue SE intersection, both from activities related to the Lord of Life Lutheran Church and from vehicles avoiding 156th Avenue SE.
- 167th Place SE – speeding is problematic, especially as traffic enters from SE 144th Street. This road is also being used as a pickup for students from Maywood Junior High as cars use 167th Place SE's connection to SE 149th Street as a faster exit from the neighborhood, in contrast to the single driveway access to the school from SE 144th Street.
- New intersection at SE 136th Street and 156th Avenue SE that opened in 2005 has sight line issues and bad lane markings.

Transit

The demonstration area is served by Metro Transit route number 111. The route services the demonstration area with 7 trips during morning commute to Seattle and 8 in the afternoon. There are no non-peak commute trips. The closest transfer point is in Renton at NE 4th Street and Union Avenue NE, connecting to route 114.

Within the demonstration area the route makes a loop that runs along SE 128th Street at the north, 172nd Avenue SE at east, and SE 144th Street at south. Although the majority of residences are within a quarter mile walking distance of a bus stop, the limited runs and times of service means that bus transit is not effective for all residents. The park-and-ride in Renton is also an option for commuters in the demonstration area, but this still requires driving approximately 10 miles round trip and may not be practical depending upon the total length of commute.

Improvements to bus transit suggested by residents include a park-and-ride located at the Briarwood shopping center, shuttle bus to serve as a feeder for the neighborhood, and expansion of service hours. Residents also expressed a need for bus pull-outs along SE 128th Street to minimize traffic congestion.

Sidewalks

Nearly the entire demonstration area is without any sidewalks. A block of SE 133rd Street, west of 156th Avenue SE, is the only place within the demonstration area that has sidewalks on both sides of the road. Four other streets within the demonstration area have small lengths of sidewalk. These brief sections along one side of the street do not connect to any other sidewalks. Residents have expressed a need for sidewalks, especially as vehicle traffic has increased on the shared roadway.

Bike Lanes

There are no bike lanes within the demonstration area. The King County Bicycling Guide Map shows both “moderate to heavy traffic with wide curb lane or paved shoulder” and “low traffic street with our without curb lane” within the demonstration area.